



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/801,773	03/09/2001	Osamu Kuroda	Q61192	4550

7590 11/13/2002
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3202

EXAMINER

LEE, SHUN K

ART UNIT PAPER NUMBER

2878

DATE MAILED: 11/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/801,773

Applicant(s)

KURODA ET AL.

Examiner

Shun Lee

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3 and 5-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 is/are allowed.
- 6) ☒ Claim(s) 2,3,5,6 and 8-10 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newman *et al.* (US 5,420,441).

In regard to claim 9, Newman *et al.* disclose (column 1, line 13 to column 2, line 16) a method of inspecting influence of stray light (*i.e.*, scatter or flare artifacts) which occurs in a radiation image reader equipped with horizontal scanning means for scanning excitation light on a storable fluorescent sheet, having stored and recorded a radiation image, in a horizontal scanning direction, vertical scanning means for scanning

Art Unit: 2878

said storable fluorescent sheet in a vertical scanning direction approximately perpendicular to said horizontal scanning direction, and reading means for obtaining an image signal which represents said radiation image by photoelectrically reading said radiation image, stored and recorded in said storable fluorescent sheet, by the horizontal scanning of said excitation light; said inspection method comprising the steps of:

- (a) preparing (column 2, lines 52-55) a storable fluorescent inspection sheet that has stored and recorded a radiation inspection image which has a density pattern in which one or more low-density and high-density regions having a contrast difference of at least 1:20 (*i.e.*, cascading six lead masks with each 0.05 mm lead layer resulting in a roughly 30% x-ray modulation depth; column 6, lines 54-66; thus providing transmissions ranging from 1 to 0.03; column 8, lines 39-40) are arrayed in said horizontal scanning direction;
- (b) obtaining (column 2, lines 56-58) an image inspection signal representing said radiation inspection image, by photoelectrically reading said radiation inspection image from said storable fluorescent inspection sheet with said reading means; and
- (c) inspecting (column 2, lines 59-60) said influence of stray light, based on an image reproduced from said image inspection signal.

The method of Newman *et al.* lacks an explicit description that the contrast difference of at least 1:20 is at least 1:50. However, Newman *et al.* also disclose (column 1, lines 49-53) that it is desirable to provide analysis of the exposure latitude and photometric

Art Unit: 2878

response linearity over the 10,000:1 dynamic range of the storage phosphor. Therefore it would be obvious to one of ordinary skill to provide a contrast difference of at least 1:10,000 in the method of Newman *et al.*, in order to provide analysis of the exposure latitude and photometric response linearity over the 10,000:1 dynamic range of the storage phosphor.

In regard to claim 10, Newman *et al.* disclose (column 7, lines 42-47; Fig. 6) a storable fluorescent inspection sheet (106) having stored and recorded a radiation inspection image that has a density pattern in which one or more low-density and high-density regions having a contrast difference of at least 1:20 (*i.e.*, cascading six lead masks with each 0.05 mm lead layer resulting in a roughly 30% x-ray modulation depth; column 6, lines 54-66; thus providing transmissions ranging from 1 to 0.03; column 8, lines 39-40) are arrayed in a horizontal scanning direction. The storable fluorescent inspection sheet of Newman *et al.* lacks that the contrast difference of at least 1:20 is at least 1:50. However, Newman *et al.* also disclose (column 1, lines 49-53) that it is desirable to provide analysis of the exposure latitude and photometric response linearity over the 10,000:1 dynamic range of the storage phosphor. Therefore it would be obvious to one of ordinary skill to provide a contrast difference of at least 1:10,000 in the storable fluorescent inspection sheet of Newman *et al.*, in order to provide analysis of the exposure latitude and photometric response linearity over the 10,000:1 dynamic range of the storage phosphor.

Art Unit: 2878

4. Claims 2, 3, 5, 6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newman *et al.* (US 5,420,441) in view of Farrokhnia *et al.* (US 6,231,231).

In regard to claims 2 and 3, Newman *et al.* is applied as in claim 9 above. The method of Newman *et al.* lacks that a boundary line, in said radiation inspection image, between said low-density and high-density regions is constructed by a straight line and is inclined with respect to said horizontal scanning direction so that it intersects both edges of said radiation inspection image which extend in said vertical scanning direction and that said density pattern in said radiation inspection image includes two high-density regions and one low-density region, said regions being arrayed in said horizontal scanning direction in the order of one high-density region, the low-density region, and the other high-density region. Test targets are well known in the art. For example, Farrokhnia *et al.* teach (column 7, lines 44-58) to provide a straight boundary line between low-density and high-density regions inclined with respect to horizontal scanning direction in order to determine both horizontal and vertical MTF in an x-ray system. Therefore it would be obvious to one of ordinary skill to provide a straight boundary line (e.g., a low-density line in a high-density region extending to the radiation inspection image edge) in the method of Newman *et al.*, in order to determine both horizontal and vertical MTF in an x-ray system such as a device for scanning a photostimulable phosphor film.

Art Unit: 2878

In regard to claims 5 and 6, Newman *et al.* is applied as in claim 10 above. In addition, Newman *et al.* in view of Farrokhnia *et al.* is applied as in claims 2 and 3 above.

In regard to claim 8 which is dependent on either claim 5 or claim 6, Newman *et al.* disclose (column 6, lines 57-63; column 7, lines 42-47; Fig. 6) disposing a radiation transmittable member (104) at a position corresponding to said density pattern on a storable fluorescent sheet (106), the radiation transmittable member (104) having a radiation transmission factor which corresponds to said contrast difference; and storing and recording said radiation inspection image in said storable fluorescent sheet (106), by illuminating said storable fluorescent sheet (106), on which said radiation transmittable member (104) has been disposed, with a dose of radiation that corresponds to said contrast difference.

Allowable Subject Matter

5. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claim 11 is allowed.

7. The following is a statement of reasons for the indication of allowable subject matter: the instant application is deemed to be directed to a nonobvious improvement over the invention patented in US Patent 5,420,441. The improvement comprises in combination with other recited elements, repeating the disposition of a radiation

Art Unit: 2878

shielding member on a storable fluorescent sheet and the illumination with a radiation dose that corresponds to a contrast difference, until a density pattern is obtained.

Response to Arguments

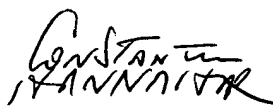
8. Applicant's arguments with respect to claims 2, 3, 5, and 6 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (703) 308-4860. The examiner can normally be reached on Tuesday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (703) 308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


CONSTANTINE HANNAHER
PRIMARY EXAMINER
GROUP ART UNIT 2878

SL
November 7, 2002